Work Order ID 73775

Thursday, September 15, 2011 10:04:46 AM

Item ID: D6101-003 **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Saddle Billet, 7075

Start Date: 9/15/2011 **Start Qty:** 60.00 **Cust Item ID:**

Required Date: 10/14/2011 **Req'd Qty:** 60.00 **Customer:**

Reference:

Run Start **Stop**

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	**Revision Nbr**								
D6101	Rev B								
100	PURCHASING	0.00							
Purchasing	**Memo**	0.00							
Purchasing	Issue P/O: 14899 a)Description: Alluminum billet b) 7.875" x 6.250" x 2.00" thick c) Tolerance on all dimensions are +0.030"/-0.000" d) Grain direction along 7.875" length e) Material: 7075-T7351 (QQ-A-250/12) f) Material certification required								
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
Packaging	**Memo**	0.00							
Packaging	Ensure material certification is attached								

P 11-09-15 (60)

P 11/10/13 (60)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

Work Order ID 73775

Thursday, September 15, 2011 10:04:46 AM

Item ID: D6101-003 **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Saddle Billet, 7075

Start Date: 9/15/2011 **Start Qty:** 60.00 **Cust Item ID:**

Required Date: 10/14/2011 **Req'd Qty:** 60.00 **Customer:**

Reference:

Run Start **Stop**

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC6- Inspect dimensions to drawing	0.00							
QC	**Memo**	0.00				60	ø		
Quality Control	Ensure Material certification comply to Dwg D6101								
130	Identify as per dwg & Stock Location: 14T44	0.00							
Packaging	**Memo**	0.00				60	ø		
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
QC	**Memo**	0.00							
Quality Control									

11/10/13

11/10/13

11/10/17

U.L.10.14

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

Picklist Print

Thursday, September 15, 2011 10:04:44 AM

Work Order ID: 73775

Parent Item: D6101-003

Parent Item Name: Saddle Billet, 7075

Start Date: 9/15/2011 **Required Date:** 10/14/2011

Start Qty: 60.00 **Required Qty:** 60.00

Comments: IPP A: □01.05.04□New Isue□EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-003P 7075-T7351 2X6.25X7.875		Purchased	No			110	Each	0.0000	1	60	60	11/10/13	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

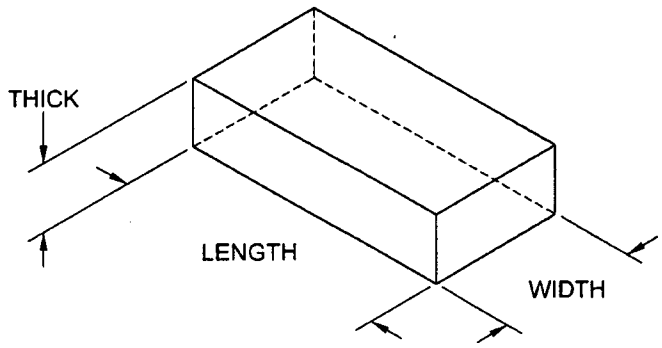
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
B D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

RELEASED 09/07/15/NW

WO 73775

REV.	DESCRIPTION	BY	DATE
B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30

DESIGN	CP	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED		DRAWING NO. D6101 — REV. B — SHEET 1 OF 1
MFG. APPR.		
APPROVED		TITLE: SADDLE BILLET, 7075 — SCALE: NTS
DE APPR.		
DATE	09.04.23	

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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Castle Metals®

A. M. Castle & Co.

PACKING SLIP

Shipment No:101898

Ship From:	Sold To:	Ship To:	Deliver To:
A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA

Date Shipped	F.O.B.	Freight Terms	Carrier	BOL No
12-OCT-2011	ORIGIN	Prepaid	LOCAL_FLEET	1018982-5

Shipment Details — **Final Destination Branch** - MON

Order No	Line No	Item No	Description
1736820	1	752237.MO	2.0000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 6.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.875")) X 7.875 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.875")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/12

Purchase Order No	Part Number	Ordered Qty	Invoice Qty
14899	YOUR ITEM NUMBER: D6101-003	60.00 PCS	60 PCS

Details

Delivery No.	Mill	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
97710321		481830A8		60			609.65

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative: | Date: | Name:

Date Printed: 12-OCT-2011 04:38:55 PM

KAISER ALUMINUM
FABRICATED PRODUCTS

CERTIFIED TEST REPORT

http://Certs.KaiserAluminum.com

Kaiser Aluminum
Trentwood Works
Spokane, WA 99205-5108
(800) 367-2586

CUSTOMER PO NUMBER:	WORK PACKAGE:	CUSTOMER PART NUMBER:	PRODUCT DESCRIPTION:		
20985		6857 AMC A97075-60	Sawed Plate		
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	ALLOY:	CLAD:	TEMPER:
1088788	1	10/27/2009	7075	BARE	T7351
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	GAUGE:	WIDTH:	LENGTH:
25956 LB	18 PCS EST.	2024599	2.0000 IN	48.500 IN	144.500 IN

SHIP TO:
CASTLE % CASTLE AEROSPACE
3050 SOUTH HYDRAULIC
WICHITA, KS 67216 US

SOLD TO:
CAS AERO%AM CASTLE METALS
ATTN: BOB OHR %ACCTS PAYABLES
3400 NORTH WOLF ROAD
FRANKLIN PARK, IL 60131 US

Certified Specifications

AMS 4078/RevG AMS-QQ-A-250/12 AMS-STD-2154 ASTM B 209/Rev07 ASTM B 594/Rev06 BAC 5439/RevH BSS 7055/RevA CMMP 025/RevS CSTI 006/RevC DPS 4.713/RevAH GAMPS 9101/RevB GSS16100/RevG/Amd1 MMS 159/RevN PS 21211/RevK

Test Results:

Test Code: 4297
LOT: 481799A5 CAST: 267 DROP: 92 INGOT: 2

		Dir/#Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
(ASTM E8/B557) (EN 2002-1) Tensile:	Temper T7351	LT / 02 (Min:Max)	73.9 : 74.2 (510 : 512)	63.0 : 63.2 (434 : 436)	11.5 : 11.8

(ASTM E1004)
(EN 2004-1)

Conductivity	%IACS:	40.1 Min	40.4 Max
	(MS/M):	23.3 Min	23.4 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR		OTHER
Actual	0.10	0.19	1.4	0.06	2.5	0.19	5.6	0.02	0.01	0.01	TOT	0.05

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States ofAmerica, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminium Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony underfederal law. ISO-9001:2000 certified.

BILL POYNOR, LABORATORIES SUPERVISOR

Plant Serial: 4175120
Kaiser Order Number: 1088788
Line Item: 1

KAISER ALUMINUM
FABRICATED PRODUCTS

CERTIFIED TEST REPORT

http://Certs.KaiserAluminum.com

Kaiser Aluminum
Trentwood Works
Spokane, WA 99205-5108
(800) 367-2586

LOT: 481828A2 CAST: 267 DROP: 91 INGOT: 4

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir/#Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 02 (Min:Max)	74.3 : 74.4 (512 : 513)	62.3 : 63.2 (430 : 436)	11.7 : 12.0

(ASTM E1004)
(EN 2004-1)

Conductivity			
	%IACS:	40.4 Min	40.7 Max
	(MS/M):	23.4 Min	23.6 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	TOT	OTHER
Actual	0.11	0.21	1.5	0.07	2.5	0.20	5.6	0.02	0.01	0.01		0.05

LOT: 481830A8 CAST: 267 DROP: 95 INGOT: 2

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir/#Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 02 (Min:Max)	75.4 : 75.5 (520 : 521)	64.7 : 65.1 (446 : 449)	11.2 : 11.4

(ASTM E1004)
(EN 2004-1)

Conductivity			
	%IACS:	40.3 Min	40.3 Max
	(MS/M):	23.4 Min	23.4 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	TOT	OTHER
Actual	0.10	0.22	1.5	0.09	2.5	0.19	5.9	0.02	0.01	0.01		0.06

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States ofAmerica, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminium Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony underfederal law.
ISO-9001:2000 certified.

BILL DOWNER LABORATORIES SUPERVISOR

AEROSPACE

KAISER ALUMINUM
FABRICATED PRODUCTS

CERTIFIED TEST REPORT

http://Certs.KaiserAluminum.com

Kaiser Aluminum
Trentwood Works
Spokane, WA 99205-5108
(800) 367-2586

LOT: 481995A9 CAST: 267 DROP: 90 INGOT: 4

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir/#Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 02 (Min:Max)	75.7 : 76.3	65.2 : 65.7	11.7 : 11.8
			(522 : 526)	(450 : 453)	

(ASTM E1004)
(EN 2004-1)

Conductivity			
%IACS:	40.3 Min	40.4 Max	
(MS/M):	23.4 Min	23.4 Max	

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR		OTHER
Actual	0.10	0.19	1.6	0.08	2.5	0.19	6.0	0.02	0.01	0.01	TOT	0.05

LOT: 489687A4 CAST: 267 DROP: 97 INGOT: 1

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir/#Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 02 (Min:Max)	76.0 : 76.1	64.7 : 65.1	11.3 : 11.7
			(524 : 525)	(446 : 449)	

(ASTM E1004)
(EN 2004-1)

Conductivity			
%IACS:	39.4 Min	39.6 Max	
(MS/M):	22.9 Min	23.0 Max	

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR		OTHER
Actual	0.10	0.20	1.5	0.11	2.6	0.19	5.8	0.02	0.01	0.01	TOT	0.04

Chemistry:		SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR		OTHER
7075	MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	MAX	0.05
	MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States ofAmerica, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminium Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony underfederal law. ISO-9001:2000 certified.

BILL POYNOR, LABORATORIES SUPERVISOR

Plant Serial: 4175120

Kaiser Order Number: 1088788

Line Item: 1

KAISER ALUMINUM
FABRICATED PRODUCTS

Kaiser Aluminum
Trentwood Works
Spokane, WA 99205-5108
(800) 367-2586

CERTIFIED TEST REPORT

http://Certs.KaiserAluminum.com

Miscellaneous Notes

7075-T7351 plate 3.501-4.000 thick, if ultrasonically inspected, meets requirements of CMMP025 per SDR CMMP025-KaiserT-3. 7075-T7351 plate 4.001-5.000 thick, if ultrasonically inspected, meets requirements of CMMP025 per SDR CMMP025-KaiserT-2.

Metal represented by this test report was immersion ultrasonically tested from one side and meets the Class A and Class B requirements of all specifications referenced on this test report.

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States ofAmerica, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminium Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony underfederal law. ISO-9001:2000 certified.

BILL POYNOR, LABORATORIES SUPERVISOR

Bill Poynor

Plant Serial: 4175120

Kaiser Order Number: 1088788

Line Item: 1